

DOCKET NO: 293709US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
AKIHIKO FUJII, ET AL. : EXAMINER: KING, FELICIA C.

SERIAL NO: 10/586,609 :
FILED: JULY 19, 2006 : GROUP ART UNIT: 1794

FOR: COFFEE DRINK COMPOSITION :

APPEAL BRIEF

SIR:

The following is an appeal of the examiner's final rejection of December 30, 2009 of claims 1-17 as obvious. A Notice of Appeal along with a one-month extension of time was timely filed on April 30, 2010.

(i) Real Party In Interest

The real party in interest is Kao Corporation, Tokyo Japan, by assignment recorded at reel/frame 019651/0201-04.

(ii) Related Appeals And Interferences

Appellants identify their contemporaneous appeal of the decision of examiner King issued in U.S. 10/587,258. Appellants, appellants' legal representative and the assignee are not aware of any other related appeals and interferences which will directly affect or be directly affected, or have a bearing on the Board's decision in the pending appeal. Any copies of decisions rendered by a court or the Board, if any, in any proceeding identified would be attached as related proceedings appendix (x).

(iii) Status Of Claims

Appellants' state the status of all the claims in the proceeding as follows:

Claims 1-17 are rejected and active in this application and are herein appealed.

No claims have been identified as allowed or confirmed.

No claims have been identified as withdrawn.

No claims have been identified as objected to.

No claims have been canceled.

(iv) Status Of Amendments

No amendment after final rejection has been requested. A copy of the claims as herein appealed is attached as appendix (viii).

(v) Summary Of Claimed Subject Matter

The claimed invention is directed to

1) a coffee composition comprising the following components (A) and (B):

from 0.01 to 1 wt.% of (A) chlorogenic acids,

less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)

hydroxyhydroquinone, (claim 1) page 2, line 23, through page 3, line 5,

2) a coffee composition comprising from 0.01 to 1 wt.% of chlorogenic acids,

characterized in that in high performance liquid chromatography, the composition has no substantial peak within a range of a relative retention time of from 0.54 to 0.61 with respect to

gallic acid used as a reference substance, (claim 2) page 3, line 19 through page 4, line 2,
3) a soluble coffee composition comprising the following components (A) and (B):

from 0.1 to 10 wt.% of (A) chlorogenic acids

less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)

hydroxyhydroquinone (claim 6) page 3, lines 5-11,

4) a soluble coffee composition comprising from 0.1 to 10 wt.% of chlorogenic acids,
characterized in that in high performance liquid chromatography, the composition has no
substantial peak within a range of a relative retention time of from 0.54 to 0.61 with respect to
gallic acid used as a reference substance (claim 7) page 4, lines 3-11, and

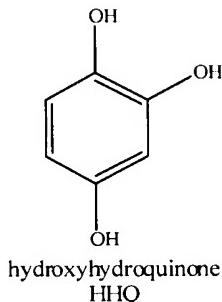
5) a packaged beverage filled with a coffee composition comprising the following
components (A) and (B):

from 0.01 to 1 wt.% of (A) chlorogenic acids

less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)

hydroxyhydroquinone (claim 11) page 3, lines 12-18.

Coffee compositions are consumed around the world. In spite of a large content of
chlorogenic acid, a known antihypertensive agent, coffee has been recognized to increase blood
pressure levels. Appellants have discovered that reduction of hydroxyhydroquinone
(hereinafter HHQ) content,



a component of coffee, in a chlorogenic acid containing coffee composition, can provide an antihypertensive effect for coffee beverages. Such a coffee composition is nowhere disclosed or suggested in the cited art of record.

Claims 1, 2, 6, 7 and 11 are the only independent claims involved in this appeal, whose subject matter is defined above.

No means plus function or step plus function as permitted by 35 U.S.C. 112, sixth paragraph are used and therefore none are identified.

(vi) Grounds Of Rejection To Be Reviewed On Appeal

- 1) The rejection of claims 1-2 and (16?) under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 is presented for review.
- 2) The rejection of claim 3 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 as evidenced by Suzuki et al EP 1186294 is presented for review.
- 3) The rejection of claims 4-5 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942, Sosuke et al. JP 6-315,434 and Kiefer U.S. 5,588,742 as evidenced by Suzuki et al EP 1186294 is presented for review.
- 4) The rejection of claims 6, 7 and 17 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 and Schlicheter U.S. 3,615,666 is presented for review.

5) The rejection of claim 8 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942, Sosuke et al. JP 6-315,434 and Schlichter U.S. 3,615,666 as evidenced by Suzuki et al. EP 1186294 is presented for review.

6) The rejection of claims 9 and 10 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434, Schlichter U.S. 3,615,666 and Kiefer U.S. 5,588,742 as evidenced by Suzuki et al. EP 1186294 is presented for review.

7) The rejection of claims 11 and 15 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942, Sosuke et al. JP 6-315,434 and Behrman U.S. 2,430,663 is presented for review.

8) The rejection of claim 12 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942, Sosuke et al. JP 6-315,434 and Behrman U.S. 2,430,663 as evidenced by Suzuki et al. EP 1186294 is presented for review.

9) The rejection of claims 13-14 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Behrman U.S. 2,430,663 and Kiefer U.S. 5,588,742 as evidenced by Suzuki et al. EP 1186294 is presented for review.

(vii) Argument

The examiner has committed reversible error in concluding the claimed invention to be obvious over the cited references as none of the cited references disclose or suggest a composition comprising 0.01 to 1 wt. % of chlorogenic acids or 0.1 to 10 wt. % in a soluble coffee composition and less than 0.1 wt. % of HHQ, based on the amount of chlorogenic acids

or no substantial HPLC peak having a retention time corresponding to HHQ, an HHQ content as claimed is not inherent to the cited references and there is no relied upon reference which identifies HHQ as poisonous matter to be removed.

Slaga et al. has been cited for a disclosure of a coffee composition containing 0.6 wt. % of chlorogenic acid (page 2, example 1). The reference discloses that natural chlorogenic acids are reduced by about 40-80% during conventional roasting processes, such that a satisfactory coffee composition can be obtained by blending a relatively high proportion of slightly roasted beans with darkly roasted beans (paragraph [0019]). In such a fashion, the coffee is perceived favorably by consumers yet contains a higher content of chlorogenic acids due to a greater percentage of beans which are only lightly roasted. Thus, the reference can be described as disclosing a coffee composition having a high chlorogenic acid content and a method of obtaining same by blending beans which are only lightly roasted. There is no disclosure of an HHQ content of less than 0.1 wt.% based on the amount of chlorogenic acids (page 2 of official action).

Stelkens has been cited for a disclosure of treatment of infusions of tea and coffee with activated carbon such that caffeine and other distasteful constituents are adsorbed (page 1, lines 19-27). Page 1, lines 8-11 generally identifies the technology as related to removing **poisonous matter** from infusions of tea and coffee. HHQ is not identified as either poisonous matter or as a distasteful constituent. Treatment with activated carbon results in a decrease in the **total nitrogenous content** (43% reduction) of the coffee infusion (page 2, lines 17-28). HHQ is not

a nitrogenous compound. Thus, Stelkens identifies a process in which coffee and tea extracts are treated with an adsorbent but does not identify or provide any motivation to remove HHQ.

The examiner cites to Sosuke JP '434 for a disclosure of filtering coffee through adsorbents such as activated carbon near 30-100Å, coconut husk activated carbon near 10 Å in size or a zeolite around 1-5 Å in size (page 2 of official action).

The examiner reasons that it would have been obvious that mixing the coffee grounds of Stelkens with the activated carbon of Sosuke would reduce the levels of poisonous substances such as HHQ.

The rejection of claims 1-2 and 16 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 and of claims 11 and 15 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942., Sosuke et al. JP 6-315,434 and Behrman U.S. 2,430,663

A coffee composition and packaged beverage having chlorogenic acids and HHQ contents as claimed is not disclosed or suggested in any of the relied upon references.

The examiner erroneously reasons that it would have been obvious to reduce the HHQ content to the claimed content, since treatment of coffee grounds with activated carbon would reduce the HHQ content to the desired level (page 2 of advisory action).

The Examiner Has Erroneously Ignored The Evidence Of Insufficient HHQ Removal
Appellants have provided the examiner with evidence of the inherent level of HHQ removal from her suggested combination of references.

The Ohminami declaration of April 24, 2009 reported the HHQ content by processing coffee according the technique disclosed in Stelkens in which ground coffee and zinc chloride activated carbon were mixed in boiling water and filtered. The content of HHQ was 0.00112 wt.%, the chlorogenic acid content was 0.46549 wt. % and the HHQ/chlorogenic acid ratio was 0.0024, in excess of the claimed upper limit of less than 0.1 wt. % based on the amount of chlorogenic acids.

The Ohminami declaration of September 23, 2009 reported the HHQ content by processing coffee according to the technique disclosed in Sosuke JP '434 in which ground coffee was subjected to drip extraction then passed through an activated coconut husk carbon¹.

	A	B	C
Coffee beans	Moca (medium roasted coffee) 40 g		
Volume of water and temperature	550 mL, 95°C		
Extraction time	3 min		
Activated carbon Shirasagi WH2c 42/60	0 g	5 g	10 g
Content of HHQ	0.001063%	0.000948%	0.000844%
Content of chlorogenic acid	0.12480%	0.12500%	0.12550%
Ratio of HHQ/chlorogenic acid	0.85%	0.76%	0.67%
Amount of extracted coffee	470.0 mL	460.0 mL	455.0 mL

The content of HHQ, chlorogenic acid and HHQ/chlorogenic acid ratio was 0.000948, 0.12500% and 0.76% and 0.000844 wt. %, 0.12550% and 0.67% respectively depending on the amount of carbon used. Both amounts exceeded the claimed upper limit of less than 0.1 wt. % of HHQ based on the amount of chlorogenic acids.

The Ohminami declaration of March 9, 2010 reported the HHQ content by processing coffee according the technique disclosed in Stelkens using an activated carbon as disclosed in Sosuke JP '434 in which ground coffee and coconut husk activated carbon were mixed in boiling water and filtered.

Using the treatment conditions of Stekens and a coconut husk 1-5Å of pore size similar to that disclosed in JP '434 Mr. Ohminami prepared coffee compositions by intimate contact for a period of five minutes. This **contact time is the same** as disclosed in Stelkens using the **same proportions** as described in Stelkens. The data is summarized below:

	Without activated carbon (reference)	With activated carbon
Content of HHQ	0.00399 wt%	0.00227 wt%
HHQ residual ratio	100 %	56.9 %
Content of chlorogenic acid	0.72271 wt%	0.51385 wt%
Chlorogenic acid residual ratio	100 %	71.1 %
Ratio of HHQ / chlorogenic acid	0.55 %	0.44 %

Using the **same contacting conditions** of five minutes and proportions as described by Stelkens and using a coconut husk activated carbon similar to that disclosed in Sosuke, the combination as proposed by the examiner, an HHQ content and chlorogenic acid content as claimed are not realized. Furthermore, there was a detectable HPLC peak corresponding with an HHQ retention time. Accordingly, the claimed coffee composition containing less than 0.1 wt. % based on the amount of chlorogenic acids is not obvious.

¹ During the preparation of this appeal, appellants identified an error in Mr. Ohminami's declaration where activated carbon Shirasagi WH2c 42/60 was erroneously identified as derived from corn husk when a coconut husk activated carbon should have been identified.

Thus, the examiner has erroneously ignored the **evidence** of the lack of insufficient HHQ removal to achieve the claimed content using 1) the technique of Stelkens, 2) the technique of Sosuke JP '434 and 3) the technique of Stelkens with the activated carbon of Sosuke JP '434.

Since none of the techniques cited by the examiner inherently produce an HHQ content and chlorogenic acid content as claimed, the examiner's conclusion as the obviousness of the claimed HHQ and chlorogenic acid content, is in error and her decision must be reversed.

HHQ Is Not Identified As A Poisonous Substance

When presented with appellant's evidence, the examiner insists in the advisory action that her rejection is based on obviousness and that "it would have been obvious to treat the coffee with coconut husk activated carbon until a desired amount of poisonous substances were removed." (see page 2)

The examiner's reasoning presupposes that HHQ is recognized as a poisonous substance. The examiner has erroneously concluded that HHQ is a poisonous substance to be removed by activated carbon treatment when none of the references relied upon even disclose HHQ. Quite simply, in the absence of a disclosure that HHQ is a poisonous substance, there would be no motivation to remove HHQ from a coffee composition. Taken to the extreme, using the examiner's basis to remove HHQ since it merely exists in the coffee bean extract, completely pure water would be obvious from the coffee extracts since it would have been obvious to remove anything which is in coffee extract. Such reasoning is absurd. The claimed

HHQ content does not inherently arise from using the combined techniques described in the art and there simply is no motivation in the cited art to remove HHQ. Thus, the examiner has erroneously concluded that there is motivation to remove HHQ.

Claim 2

This embodiment of the claimed invention is directed to a coffee composition comprising 0.01 to 1 wt. % of chlorogenic acids and having no substantial HPLC peak corresponding to HHQ.

As noted above, none of the cited references, either alone or in combination, suggest a composition containing less than 0.1 wt. % of HHQ based on the amount of chlorogenic acids. The HHQ content suggested by the cited art exceeds 0.1 wt. % based on the amount of chlorogenic acids. The HHQ content is measured by HPLC. Accordingly, a composition containing an amount of HHQ which exceeds 0.1 wt. % based on the amount of chlorogenic acids would necessarily **have an HPLC peak** within the range of 0.54 to 0.61 relative to gallic acid due to the presence of an amount of HHQ in excess of less than 0.1 wt. % based on the amount of chlorogenic acids. Thus, the examiner's conclusion that a composition having no substantial HPLC peak corresponding to HHQ to be obvious is in error as there is no evidence to support such a conclusion.

Behrman et al. has been cited for disclosing a packaged coffee composition. However, the reference fails to cure the basic deficiencies of the rejection in failing to disclose or suggest the claimed HHQ content relative to chlorogenic acids.

Claims 3 and 8

The rejections of claim 3 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 as evidenced by Suzuki et al. EP 1186294, of claim 8 under 35 U.S.C. §103(a) in further view of Schlichter U.S. 3,615,666 and of claim 12 under 35 U.S.C. §103(a) in further view of Behrman U.S. 2,430,663

This embodiment of the claimed invention is directed to a hypertension alleviating composition.

The examiner has committed reversible error in concluding claims 3, 8 and 12 to be obvious as the examiner has no basis for concluding a composition containing 0.01 to 1 wt. % of chlorogenic acids and less than 0.1 wt. % of HHQ based on the amount of chlorogenic acids to be obvious or that such a coffee composition would have an antihypertensive effect.

Suzuki et al. has been cited for the proposition that chlorogenic acids are known to alleviate hypertension, citing paragraph [0013].

Appellants note that Suzuki et al. reports a chlorogenic acid containing composition as alleviating hypertension. There is no disclosure of a coffee composition having an antihypertensive effect. Appellants also note the disclosure on page 2 of appellants' specification, paragraph [0004] which states that **coffee beverages** to date have not been recognize to have a clear hypotensive effect but rather **increased the blood pressure level**, citing to 4 publications. Thus, the examiner has erroneously concluded that the claimed coffee composition would be expected to have an antihypertensive effect. As there is no suggestion in the cited art of record of an antihypertensive effect for a coffee composition, the examiner's

conclusion as to the obviousness of the claimed coffee composition having an antihypertensive effect is in error and her decision must be reversed.

Behrman et al. has been cited for disclosing a packaged coffee composition. However, the reference fails to cure the basic deficiencies of the rejection in failing to disclose or suggest the claimed HHQ content relative to chlorogenic acids.

The rejections of claims 4-5 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942, Sosuke et al. JP 6-315,434 and Kiefer U.S. 5,588,742 as evidenced by Suzuki et al EP 1186294, of claims 9 and 10 under 35 U.S.C. §103(a) in further view of Schlichter U.S. 3,615,666 and of claims 13-14 under 35 U.S.C. §103(a) in further view of Behrman U.S. 2,430,663

Not notwithstanding the errors made by the examiner in failing to disclose or suggest the claimed chlorogenic acid and HHQ contents, the examiner further errs in concluding each of claims 4, 5, 9 and 10 to be obvious as there is no suggestion to label such compositions as alleviating hypertension or as useful for those having a higher blood pressure.

Specifically, the examiner has cited to Kiefer for motivation to label a coffee product. However, Kiefer describes labeling of food with **a nutritional content**. There is no suggestion to provide labeling to suggest usefulness in alleviating hypertension or for use for those having a higher blood pressure.

Further there is no suggestion in the cited references that a coffee composition would have an antihypertensive effect or would be effective a reducing high blood pressure.

Appellants note that Suzuki et al. reports a chlorogenic acid containing composition as alleviating hypertension. Appellants also note the disclosure on page 2 of appellants'

specification, paragraph [0004] which states that **coffee beverages** to date have not been recognize to have a clear hypotensive effect but rather **increased the blood pressure level**, citing to 4 publications. Thus, the examiner has erroneously concluded that the claimed coffee composition would be expected to have an antihypertensive effect and therefore provide motivation to provide the labeling claimed.

Behrman et al. has been cited for disclosing a packaged coffee composition. However, the reference fails to cure the basic deficiencies of the rejection in failing to disclose or suggest the claimed HHQ content relative to chlorogenic acids.

The examiner has erred by finding an expectation for an antihypertensive effect and by equating nutritional labeling with use labeling. In view of the examiner's error her decision as to claims 4, 5, 9, 10 and 13-14 must be reversed.

The rejection of claims 6, 7 and 17 under 35 U.S.C. §103(a) over Slaga et al. in view of Stelkens GB 354,942 and Sosuke et al. JP 6-315,434 and Schlicheter U.S. 3,615,666

The examiner has committed reversible error in concluding claims 6, 7 and 17 to be obvious as the examiner has no basis for concluding a soluble coffee composition comprising 0.1 to 10 wt. % of chlorogenic acids and less than 0.1 wt. % of HHQ, based on the amount of chlorogenic acids or no substantial HPLC peak having a retention time corresponding to HHQ, to be obvious.

Schlichter has been cited for disclosing a soluble coffee composition. Column 1 identifies the composition has generally being prepared by extracting roast and ground coffee,

concentrating, preferably to at least 50% solubles and drying to provide a dry instant coffee product.

Appellants have provided evidence as to the inherent HHQ content and proportion relative to chlorogenic acids, of coffee compositions prepared by the methods cited in the art. The embodiment identified by the examiner as forming an obvious coffee composition was to use the processing technique of Stelkens with the activated carbon of Sosuke. Appellants have provided evidence in the form of the Ohminami declaration of March 8, 2010 that such a process produced an HHQ/chlorogenic acid ratio in excess of the claimed content of less than 0.1 wt. % based on the amount of chlorogenic acid. Thus, the examiner has not proven a content of HHQ less than 0.1 wt. % based on the amount of chlorogenic acid, to be obvious in any composition.

Thus, in view of the initially high HHQ content in the composition as processed according to Sosuke, a soluble coffee composition having less than 0.1 wt.% HHQ based on chlorogenic acids would not have been obvious. The examiner has failed to provide any references to suggest such a low HHQ content in a soluble coffee composition. For this reason, the deficiencies of her rejection do not allow for a conclusion of obviousness and therefore her decision must be reversed.

In a similar fashion, the Ohminami declarations of September 23, 2009 and March 9, 2010 each demonstrated that when processed by the methods suggested by the cited art, the relative content of HHQ to chlorogenic acids exceeded the claimed content. Since the relative

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content of HHQ to chlorogenic acid exceed the claimed content in a coffee composition, the HHQ content in a soluble coffee composition must also exceed the claimed content.

In view of the error by the examiner to recognize that a content of HHQ relative to chlorogenic acids is not disclosed in any composition, her conclusion of obviousness is in error and must be reversed.

In view of the errors committed by the examiner, her conclusions as to obviousness are in error and must be reversed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

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(viii) Claims Appendix

Claim 1 A coffee composition comprising the following components (A) and (B):
from 0.01 to 1 wt.% of (A) chlorogenic acids,
less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)
hydroxyhydroquinone.

Claim 2 A coffee composition comprising from 0.01 to 1 wt.% of chlorogenic acids,
characterized in that in high performance liquid chromatography, the composition has no
substantial peak within a range of a relative retention time of from 0.54 to 0.61 with respect to
gallic acid used as a reference substance.

Claim 3 The coffee composition according to Claim 1 or 2, which is a hypertension
alleviating composition.

Claim 4 The coffee composition according to claim 1 or 2, which has a hypertension
alleviating effect and has, attached thereto, a label indicating that the composition is useful for
alleviating hypertension.

Claim 5 The coffee composition according to Claim 1 or 2, which has, attached thereto,
a label indicating the composition is useful for those having a higher blood pressure.

Claim 6 A soluble coffee composition comprising the following components (A) and (B):

from 0.1 to 10 wt.% of (A) chlorogenic acids

less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)

hydroxyhydroquinone.

Claim 7 A soluble coffee composition comprising from 0.1 to 10 wt.% of chlorogenic acids, characterized in that in high performance liquid chromatography, the composition has no substantial peak within a range of a relative retention time of from 0.54 to 0.61 with respect to gallic acid used as a reference substance.

Claim 8 The soluble coffee composition according to Claim 6 or 7, which is a hypertension alleviating composition.

Claim 9 The soluble coffee composition according to claim 6 or 7, which has a hypertension alleviating effect and has, attached thereto, a label indicating that the composition is useful for reducing blood pressure.

Claim 10 The soluble coffee composition according to Claim 6 or 7, which has, attached thereto, a label indicating the composition is useful for those having a higher blood

pressure.

Claim 11 A packaged beverage filled with a coffee composition comprising the following components (A) and (B):

from 0.01 to 1 wt.% of (A) chlorogenic acids

less than 0.1 wt.%, based on the amount of the chlorogenic acids, of (B)

hydroxyhydroquinone.

Claim 12 The packaged beverage according to Claim 11, which is a hypertension alleviating composition.

Claim 13 The packaged beverage according to claim 11, which has a hypertension alleviating effect and has, attached thereto, a label indicating that the beverage is useful for alleviating hypertension.

Claim 14 The packaged beverage according to Claim 11, which has, attached thereto, a label indicating the beverage is useful for those having a higher blood pressure.

Claim 15 The packaged beverage according to any one of Claims 11 to 14, wherein the package is oxygen impermeable.

Claim 16 The process for preparing a coffee composition as claimed in any one of Claims 1 to 2, which comprises treating a roasted coffee beans extract with activated carbon having an average pore size of 5 angstrom (\AA) or less in a micropore region.

Claim 17 A process for preparing a soluble coffee composition as claimed in any one of Claims 6 to 7, which comprises treating a roasted coffee beans extract with activated carbon having an average pore size of 5 angstrom (\AA) or less in a micropore region to yield a coffee composition containing hydroxyhydroquinone in an amount less than 0.1 wt.% of the total chlorogenic acid amount; and spray drying or freeze drying the coffee composition.

(ix) Evidence Appendix

Ohminami declaration March 8, 2010

Ohminami declaration September 23, 2009

Ohminami declaration April 24, 2009

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FOR: COFFEE DRINK COMPOSITION :

DECLARATION UNDER 37 C.F.R. §1.132

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

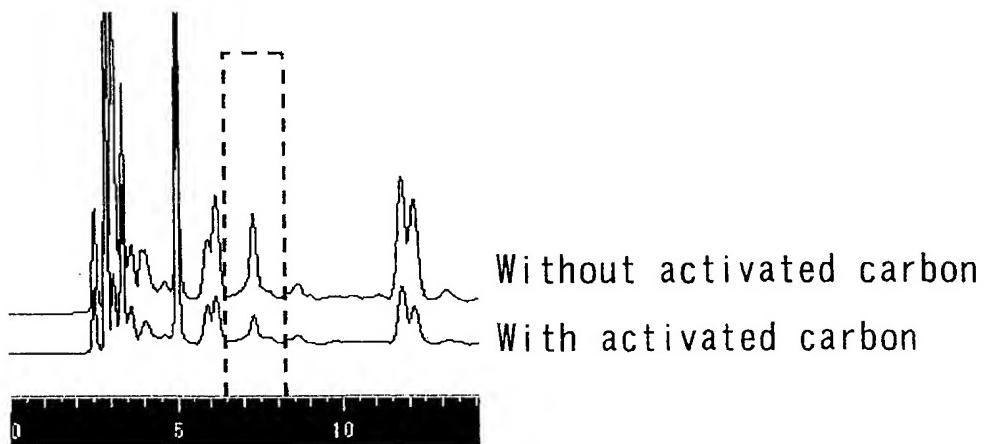
SIR:

Now comes Mr. Hideo Ohminami who deposes and declares that:

1. I am a graduate of Kyoto Pharmaceutical University and received my master's degree in the year 2001.
2. I have been employed by the Kao Corporation for the past 8 years, as a researcher in the field of organic chemistry.
3. I am a named inventor of the above-identified application.
4. The following experiments were conducted by me or under my direct supervision and control.

10 g of ground Costa-Rican coffee beans (medium roasted, medium grind) were intimately mixed with 1.25 g of activated carbon (Shirasagi WH2c 42/60(coconut husk 1-5 Angstrom of pore size)). 25 mL of boiling water was poured onto the mixture and after 5 minutes of standing still, coffee beans and activated carbon were removed by filtration. The hydroxyhydroquinone (HHQ) and chlorogenic acid contents were determined by HPLC as follows:

	Without activated carbon (reference)	With activated carbon
Content of HHQ	0.00399 wt%	0.00227 wt%
HHQ residual ratio	100 %	56.9 %
Content of chlorogenic acid	0.72271 wt%	0.51385 wt%
Chlorogenic acid residual ratio	100 %	71.1 %
Ratio of HHQ / chlorogenic acid	0.55 %	0.44 %



I declare under penalty of perjury under the laws of the United States of America
that the foregoing is believed to be true and correct. 28 USC 1746(1)

Hideo Ohminami
Hideo Ohminami

Mar. 3, 2010
Date

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2. I have been employed by the Kao Corporation for the past 7 years, as a researcher in the field of organic chemistry.
4. I am a named inventor of the above-identified application.
5. The following experiments were conducted by me or under my direct supervision and control.

40 g of ground coffee beans (medium roasted) were subjected to drip extraction with hot water. The extract was further passed through an adsorbent of activated carbon (corn husk 1-5 Å). The HHQ and chlorogenic acid contents were determined by HPLC as follows:

	A	B	C
Coffee beans		Moca (medium roasted coffee) 40 g	
Volume of water and temperature		550 mL, 95°C	
Extraction time		3 min	
Activated carbon Shirasagi WH2c 42/60	0 g	5 g	10 g
Content of HHQ	0.001063%	0.000948 %	0.000844%
Content of chlorogenic acid	0.12480%	0.12500%	0.12550%
Ratio of HHQ/chlorogenic acid	0.85%	0.76%	0.67%
Amount of extracted coffee	470.0 mL	460.0 mL	455.0 mL

I declare under penalty of perjury under the laws of the United States of America
that the foregoing is believed to be true and correct. 28 USC 1746(1)

Hideo Ohminami
Hideo Ohminami

Sep. 11. 2009.
Date

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Now comes Hideo Ohminami who deposes and declares that:

1. I am a graduate of Kyoto Pharmaceutical University and received my master's degree in the year 2001.
2. I have been employed by the Kao Corporation for the past 7 years, as a researcher in the field of organic chemistry.
3. The following experiments were conducted by me or under my direct supervision and control.

10 g of ground Costa-Rican coffee beans (medium roasted, medium grind) were intimately mixed with 1.25 g of activated carbon (Wako Pure Chemicals, Ltd, median particle size 0.3 mm (residue 0.3 mm max 40%, 0.3 to 0.063 mm min 50%, pass 0.063 mm max 10%). 25 mL of boiling water was poured onto the mixture and after 5 minutes of standing still, coffee beans and activated carbon were removed by filtration. The hydroxyhydroquinone (HHQ) and chlorogenic acid contents were determined by HPLC as follows:

HHQ concentration: 0.00112 wt. %

Chlorogenic acid concentration: 0.46549 wt. %

HHQ/chlorogenic acid ratio 0.0024

I declare under penalty of perjury under the laws of the United States of America
that the foregoing is believed to be true and correct. 28 USC 1746(1)

Hideo Ohminami

Apr. 10, 2009

Date

Application No. 10/586,609
Appeal of Office Action of December 30, 2009

(x) *Related Proceedings Appendix*

Contemporaneous appeal of U.S. 10/587,258